Science of the Total Environment 648 (2019) 56–65

Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv

# Towards a new model for the governance of the Weerribben-Wieden National Park

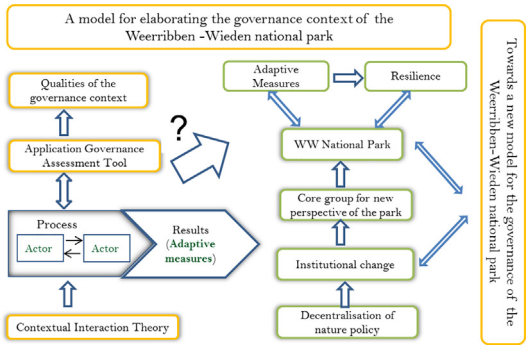
Lordkipanidze Maia [a,*], Lulofs Kris [b], Bressers Hans [b]

[a] Department of Governance and Technology for Sustainability, CSTM, University of Twente, Enschede, Agora 1, 8934 CJ Leeuwarden, the Netherlands
[b] Department of Governance and Technology for Sustainability, CSTM, University of Twente, Enschede, Drienerlolaan 5, Building 10, Ravelijn, PO Box 217, 7400 AE Enschede, the Netherlands

## HIGHLIGHTS

- Institutional context has a significant influence on the governance for resilience.
- Institutional change by decentralisation comes in a multiform of layers and aspects.
- Decentralisation may lead to a lengthy transition process with uncertain outcomes.
- Institutional change restricted adaptiveness of the governance context towards resilience.

## GRAPHICAL ABSTRACT


A model for elaborating the governance context of the Weerribben -Wieden national park
Qualities of the governance context
Application Governance Assessment Tool
Process
Actor
Actor
Results (Adaptive measures)
Contextual Interaction Theory
?
Adaptive Measures
Resilience
WW National Park
Core group for new perspective of the park
Institutional change
Decentralisation of nature policy
Towards a new model for the governance of the Weerribben-Wieden national park

## ARTICLE INFO

*Article history:*
Received 15 May 2018
Received in revised form 8 August 2018
Accepted 9 August 2018
Available online 10 August 2018

Editor: D. Barcelo

*Keywords:*
Resilience
Protected area
Management
Ecosystem services

## ABSTRACT

The paper focuses on the governance of the Dutch national park Weerribben-Wieden and its ability to foster ecological resilience in the face of climate change and human disturbances. The study highlights the role of various characteristics of the institutional context of governance in which resilience-relevant decisions are prepared, taken and implemented as referenced by an assessment of the governance context. The relevance of such an assessment is found in the frequent institutional changes in nature policy. This paper examines how care for the resilience in an area is supported by the governance context, given the major recent restructurings. The drastic changes in nature policy in the Netherlands include national government withdrawing from their central role and decentralising the authority for nature tasks to the provinces. Subsequently, the province has also withdrawn itself in the Weerribben-Wieden case and decentralised nature tasks to the municipality. So, in our research case, the 'take home message' relates to the impacts of decentralisation in different 'sizes'. Institutional change by decentralisation does not come in 'one size', but rather in a multiform phenomenon of layers and aspects. The governance assessment tool was used to analyze the consequences of this decentralisation for the processes in which resilience measures are implemented in various degrees and interactions. Decentralisation without balanced problem perspectives and goals, without an integral approach towards the park's resilience, and without adequate strategies and instruments, most likely leads to a lengthy transition process with uncertain outcomes. The study concludes that institutional changes in this case restricted adaptiveness of governance towards resilience and has diminished a sense of responsibility for the maintenance of the national park resources.

© 2018 Elsevier B.V. All rights reserved.

* Corresponding author.
*E-mail addresses:* m.lordkipanidze@utwente.nl (L. Maia), k.r.d.lulofs@utwente.nl (L. Kris), j.t.a.bressers@utwente.nl (B. Hans).

https://doi.org/10.1016/j.scitotenv.2018.08.121
0048-9697/© 2018 Elsevier B.V. All rights reserved.

## 1. Introduction

### 1.1. Trends in protected area governance

An emerging trend in biodiversity policies links ecological resilience to governance processes (Carpenter and Folke, 2006) creating resilience-based governance as a new approach in ecological knowledge. Governance is recognised as critical to effective conservation by the Convention on Biological Diversity (Dearden et al., 2005). It is a relatively new field of research for protected area resilience (Hannah, 2006; Lockwood, 2010; Eagles et al., 2013). This paper intends to illustrate the relationship between governance and resilience through an assessment of the governance of the Dutch national park Weerribben-Wieden to enhance ecosystem resilience. Fostering ecosystem resilience uses processes where decisions are prepared, taken and implemented. We refer to the institutional setting as the governance context.

Policy changes in nature conservation have influenced the governance of protected areas. The commonly applied protectionist model was challenged by new policy approaches that gave importance to economic consideration for nature conservation. Protected areas became seen as more complex in concept and more complicated in management (Dudley et al., 2014). Moreover, with the approval of the European Biodiversity Strategy 2020, the European Union encourages to develop markets that capture the economic value of biodiversity and develop partnerships for biodiversity with a wide variety of stakeholders (Kamphorst and Coninx, 2016: 1; European Commission, 2011). Thus, protected area governance has tended to become a more multi-level system, empowering and engaging a wider variety of participants (Lockwood, 2010).

### 1.2. Nature policy changes in the Netherlands

A comparable evolution is taking place in nature policy in the Netherlands. National government has implemented major changes in nature policy formerly associated with a strong top-down approach where national government led, while the provinces' role was implementation. For some decades this was a stable policy strategy based on the National Ecological Network concept which envisioned larger nature areas as being interconnected by ecological zones (Kamphorst and Coninx, 2016). Recently, national government has withdrawn from their central role, but still coordinates with European and international commitments in nature policy (Buijs et al., 2014). Authority for nature policy-making and implementation is now decentralised to the provinces, who have also faced severe budget cuts. The argument for decentralisation assumes that on a smaller scale, policies and actors can better take into account local circumstances and variations. This might have some truth but the political arguments varied as the reduced governmental role is built on a belief in a market-oriented approach and individual responsibility and involvement.

### 1.3. The challenge addressed

The challenges in this paper relate to the addressed institutional changes in the governance of nature policy to protect and enhance the resilience of natural areas. These are particularly challenging for biodiversity and resilience that require coherent, multi-scale approaches. Local measures may well not harm, but must be coherent across a whole relevant ecosystem. Whether institutions are actually committed to biodiversity and resilience relies on the nature of their practices and procedures (McLean and Guha-Sapir, 2013). Moreover, a range of governance context conditions (such as available resources and finances) influence the feasibility of measures to improve resilience of nature areas.

Nowadays, the challenge for the Weerribben-Wieden is to maintain and improve the quality and resilience of the area characterised by its special nature values and cultural history, and to deal with the changing governance of nature policy. A strengthened leisure economy is one future challenge. The argument to decentralise presents a double challenge: fostering resilience, and maintaining ecosystem services; two foci that in a perfect world would be highly related.

Currently, the park is transitioning towards a new style of organisation for governance and management involving local partners led by a local municipality. This major challenge is the focus of research for this study. The quality of the nature experience is a core idea of this new style. This follows on from the withdrawal of the national authorities and, later, the provincial authorities and their implications for the coordination, vision and resources for park management.

### 1.4. Objective and research question

The main objective is to assess the governance context of the concerned area and to highlight factors influencing enhanced resilience. The Weerribben-Wieden is a unique natural area of local, national and international importance for maintaining biodiversity, ecosystem functions and flow of those services. This stresses the importance of enhancing resilience here. We analyzed the factors using the governance assessment tool (GAT) (Bressers et al., 2016), with its basis in contextual interaction theory (CIT) (Bressers, 2004). The tool helps explore relationships between resilience and governance and the interactions among relevant governance features. Is the governance context still a part of the support system for resilience, or has it become the major challenge itself (given the governance context changes since 2011 with the two steps of decentralisation and withdrawal of governmental support)?

The research question addressed is: To what extent do governance factors support or hamper implementation of measures to foster resilience of the park? Implementation means “the processes that concern the application of relevant policy instruments, including the realization of projects to achieve physical changes” (Bressers, 2004: 284).

This research question will provide insights into the governance of the resilience of the studied area by exploring the processes and conditions that influence decision-making; demonstrating a connection between the conceptual governance tool and adaptive actions to achieve resilient results. This study will add to the literature in this relatively new field of study and the literature on decentralisation. In Section 2 main concepts for the study are defined. Section 3 presents the governance assessment framework. Section 4 describes the methodology. Section 5 presents the case of the Weerribben-Wieden National Park, observing the threats to the area and changes in the governance structure. Section 6 presents the application of the governance assessment framework, analyzing the governance context according to GAT. Finally, the conclusions are drawn in Section 7.

## 2. Defining the main concepts

### 2.1. Resilience

The meaning and the use of resilience is interpreted in different ways across disciplines (Holling, 1973; Carpenter et al., 2001; Folke, 2006; Béné et al., 2014). The exact definition of resilience remains a subject of discussion (De Bruijn et al., 2017). Our study defines it as: “the ability of ecosystems to absorb changes and still persist and adapt in the face of disruptions and maintain relationships within a system” (Holling, 1973; Adger, 2003, 1; Folke et al., 2010; Davoudi, 2012). This derives from understanding natural systems as being dynamic (Davidson et al., 2013) and incorporating positive adaptation within the context of human or natural threats (Folke et al., 2010). Next to absorbtive and adaptive capacities of a system, transformability also is seen as an important characteristic of resilience thinking (Folke et al., 2010). It helps “to create a new system when ecological, economic, or social structures make the existing system untenable” (Walker et al., 2004: 5).

The resilience concept has been adopted and interpreted in policy contexts as well (De Bruijn et al., 2017). Moreover, resilience has been viewed as complex system being context-dependent and as a process of learning lessons from governance failures (Chandler, 2014; Joseph, 2016). It also depends on the legal and regulatory environment that gives control over natural resources to its users (Bahadur et al., 2010: 10). In order to maintain or increase resilience, managers and policy makers must understand what qualities of a focal system (study area) enhance the system resilience (De Bruijn et al., 2017). However, for policy makers, it is often unclear how resilience thinking can be operationalised in practice (De Bruijn et al., 2017). This research offers a case study approach to operationalise resilience.

### 2.2. Defining governance

Governance is a broad term used with a variety of meanings. This paper defines governance as: "a combination of the relevant multiplicity of responsibilities and resources, instrumental strategies, goals, actor-networks and scales that forms a context that to some degree restricts and to some degree enables actions and interactions" (Bressers et al., 2016: 6). The characteristics of governance, such as participation and collaboration of the multi-layered institutions and networks, are mentioned in literature on understanding of interlinkages of adaptive governance and increasing resilience (Gunderson and Light, 2006; Djalante et al., 2011; Fung, 2006); much of which calls for adaptive governance to achieve resilience (Folke et al., 2005; Huitema et al., 2009). Adaptive governance requires the capacity to learn to manage for resilience (Hennessey, 1994; Garmestani and Benson, 2013). Local knowledge of ecological and social conditions is often critical to managing resilience. Polycentric systems can allow this knowledge to shape governance, and facilitate decentralisation, or at least include local actors and knowledge, to be productive (Janssen et al., 2007; Ostrom, 2010; Garmestani and Benson, 2013). Polycentric systems are characterised by multiple governance units at multiple scales, with each unit having some capacity to govern at its scale (Ostrom, 2010; Garmestani and Benson, 2013). According to Andersson and Ostrom (2008), fostering good environmental governance is context-specific, and requires learning and adaptive capacity to manage for resilience (Hennessey, 1994; Garmestani and Benson, 2013).

## 3. Governance assessment framework

Various assessment frameworks in the literature analyze governance systems (Lockwood, 2009; Ostrom, 2009; Borrini-Feyerabend and Hill, 2015; Potts et al., 2016; Clement et al., 2016; Wyborn, 2015). However, no widely accepted framework identifies the requirements of an appropriate governance regime for protected areas or those aspects that need to be targeted for improvement (Lockwood, 2009; Eklund and Cabeza, 2016). Some frameworks are tailored to the requirements of environmental problems or needs (Clement et al., 2016), or are based on the principals of good governance (Lockwood, 2009). Others are related to the approach of institutional diagnosis or institutional fit (Young, 2008; Cox, 2012; Clement et al., 2016; Potts et al., 2016). However, these evaluative frameworks do not consider the degree of influence of the interactions between policies, programmes and relationships within governance systems as a whole and are considered rather vague (Potts et al., 2016; Cox, 2012).

Governance assessment framework used in this study consists of a contextual interaction theory (CIT) and governance assessment tool (GAT) as part of the theory (Bressers et al., 2016) (Fig. 1). The GAT derives from CIT which is rooted in implementation analysis (Bressers, 2004; Bressers et al., 2016). The framework used provides a synthesis of other available frameworks focusing on implementation processes. CIT has developed and been further elaborated in the 'instrumental theory' to enable comparison of instruments (Bressers et al., 2016), adding network analysis, multiple scale issues and other governance regime aspects as context.

CIT focuses on actors and their interaction processes and explains the dynamics of social interaction processes. It assumes multi-actor processes can be understood from characteristics of different stakeholders involved in the process, such as: motivations (which drive their actions), cognitions (information with which the situation is interpreted), and resources (providing capacity and power) (Bressers et al., 2016). These characteristics shape the process and are influenced by experiences that can change during the process. The three characteristics are intrinsic to the actors and influenced by the process. They are also influenced by many external factors from a multi-layered context that is partly case-specific. These factors include the local geography (Kotzebue et al., 2010) and the history of previous decision-making and framing. This history affects the institutional arena and the extent to which actors participate and with what legal resources and expectations (De Boer and Bressers, 2011).

GAT elaborates a simple concept of policy with actors striving for goals with means and expands this to the governance context. It consists of a matrix of five governance dimensions and four quality criteria. The five dimensions are: *levels & scales* (assuming a general multi-level character for all scales, e.g. administrative, spatial, hydrological or

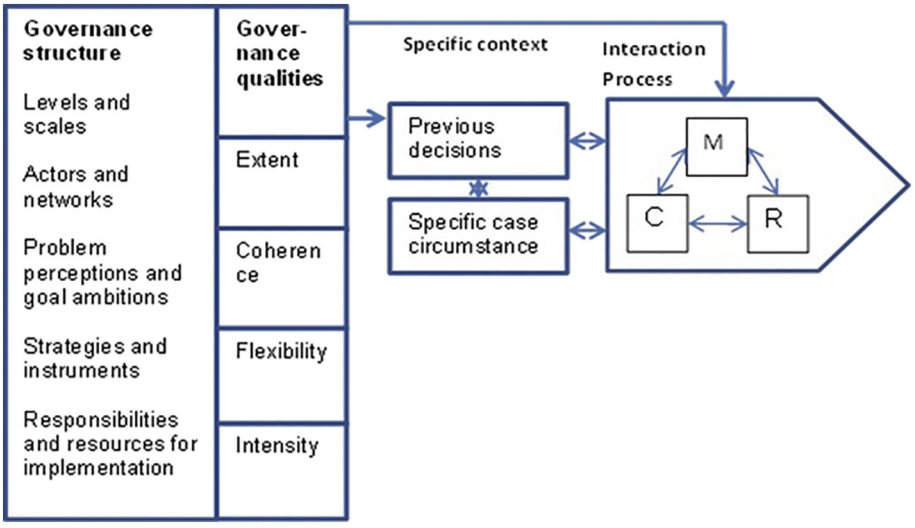



**Fig. 1.** CIT and GAT as an assessment framework of the case.
Based on Bressers and Lulofs (2010)

political); *actors* & *networks* (assuming a multi-actor character of relevant network/s); *problem perspectives* & *goal ambitions* (assuming a multi-faceted character for problems and ambitions); *strategies* & *instruments* (assuming a multi-instrumental character for strategies of the actors involved); and, *resources* & *responsibilities* (assuming a complex multi-resource basis for implementation) (Bressers and Kuks, 2004).

These five dimensions can be used to describe systematically the contents of a governance context for certain issues in a particular area. The four quality criteria are: *extent* (enquiring if all relevant aspects of the governance dimensions are taken into account); *coherence* (whether elements of the governance dimensions strengthen, rather than contradict each other), *flexibility* (the degree to which the governance regime allows and facilitates multiple adaptive strategies to reach the goals); and, *intensity* (how much the elements of the governance context urge and support changes in current developments). This tool provides a systematic assessment of all relevant elements and qualities of the governance context. It helps understand the circumstances for the implementation of measures. The GAT enables the assessment of four core qualities of governance by applying them to the distinguished dimensions of governance. It also enables assessment of circumstances that are supportive, restrictive or neutral for the implementation of measures. GAT has been applied mostly in the field of water management (De Boer and Bressers, 2011; Casiano, 2017; Vinke de Kruijf et al., 2015). However, applying GAT to protected areas is new.

The method reveals the hindrances in the quality of the governance context where improvements and policy interventions are needed to increase resilience. The assessment framework complements other governance assessment frameworks for implementation processes. It emphasises the mechanisms and results of a policy process that depend on actors' characteristics that help understand multi-level, multi-actor processes. This framework was chosen over others because it builds upon explicit relations between actor characteristics and degree of cooperation in the process and outcomes of the process, while taking into account the layers and specifics of the (institutional) governance context. It facilitates the assessment of changes in the institutional context (e.g. decentralisation) related to the specific context, the process and the outcomes (resilience). Furthermore, this framework facilitates in-depth case study research in a structured manner in a longitudinal perspective.

## 4. Methodology

The methodology uses a case study approach with in-depth exploration of complex issues in their actual setting. The research question is 'what' and 'process' oriented. It is exploratory, as well as explanatory, by nature in terms of how and why multiple actors interact to provide insight concerning their behaviour in reaching the goals (Yin, 2003). It is "based on direct observations, documents and systematic interviewing". The focus and interactions around the research are in a real-life context surrounding a contemporary phenomenon (Yin, 2003). A case study approach enables operationalising resilience by identifying the current threats and identifying governance aspects that deliberate resilience (Davidson et al., 2013; López-Angarita et al., 2009). It can support understanding of the current state of resilience by identifying the components of resilience of the focal system. In Resilience Alliance assessment workbook (2010: 25) "understanding resilience of a system involves describing its current state with its historical and potential future states". Key components that describe the current state might include, for example, the biophysical properties of the park and the social properties. Identifying the focal system (the case study area) and scale and main issues are essential to understand the current state of resilience (Resilience Alliance, 2010; Davidson et al., 2013; López-Angarita et al., 2009). The case study approach provides insight into the interactions and interdependencies between social and ecological systems threatened by climate change or human impacts (Davidson et al., 2013).

The unit of the analyses focuses on the transition process from an old to the new model of governance for the park and on stakeholder interactions around resilience issues. The local authorities expressed the need to improve environmental conditions to respond to the institutional changes in the governance of nature policy. The research addresses this need.

Combined methods have been used for data collection. Conceptual data was obtained from the literature and reports and documents published by relevant organisations. The evaluative questions of the governance assessment tool (presented in Table 1) cover the governance dimensions and qualities and asked during in-depth interviews with representatives of the organisations. Stakeholders interviewed included: the local authorities (municipality of Steenwijkerland), the Research Group Marine Wetland Studies, and Natuurmonumenten (Society for preservation of nature monuments). Furthermore, an interactive workshop[1] was organised with stakeholders to discuss and deepen data and analysis. The goal was to discuss issues and developments with various actors. The main questions asked were: What are the main challenges and threats observed in the area? To what extent is resilience embedded within practices and procedures of the management agendas?

A ranking of *supportive* (+), *neutral* (0) and *restrictive* (-) was used when assessing the governance context according to the qualities and dimensions of the GAT. These judgments were made through discussions between at least two of the observers to prevent the assessment overlooks important aspects (Bressers et al., 2013) and to check for the consistency. The analysis relied on the discussions between the interviewer and the interviewees, interview transcripts and notes. This paper investigates whether the governance assessment tool can contribute to the governance assessment process for enhancing the resilience of nature areas.

## 5. The case study: the Weerribben-Wieden National Park

The Weerribben National Park was established in 1992 and is included in the Ramsar list of wetlands in 1980.[2] In 2009, the neighbouring nature reserve, the Wieden, was added. Together, they form the Weerribben-Wieden National Park (Fig. 2), which is a unique and the largest freshwater wetland in northwest Europe. It covers 10,500 ha, of which the Weerribben is 3500 ha and the Wieden is 7000 ha. The Weerribben is owned and managed by Staatsbosbeheer (Dutch Forest Service)[3] and the Wieden by Natuurmonumenten (Society for conservation of natural monuments).

### 5.1. Landscape formation and threats observed

Peat excavations over many centuries has created a linear pattern of ridges where the peat was dried and open ditches were cut. These patterns remain and are a characteristic feature of the area (Fig. 3). Aquatic plants have gradually taken hold in the ditches and evolved into reedbeds, quaking bogs and marshy woodland (In the Wieden, in particular, the vegetation succession from open water to reedlands to wetlands, hay-land and bog woodland can be experienced). The result is a varied landscape rich in flora and fauna. However, in the second half

[1] The workshop was organised in the frame of the Summer School "Working on innovative solutions for our future challenges" by the University of Groningen/Campus Fryslân, 6–8 June 2016. The theme of the workshop was "Resilience and governance of natural landscapes: climate resilience measures and governance analyses of the Dutch National Parks".

[2] The Netherlands is rich in wetlands, out of the total area (41,864 km$^2$) 16% is regarded as internationally important wetland and 7% of it is on the Ramsar list of wetlands (Wolff, 1993; Best et al., 1993; Bakecura, 2015).

[3] Staatsbosbeheer is commissioned by the Dutch government to strengthen the position of nature in the Netherlands. It is a leading national public body and land owner and manager of a sizeable amount of nature reserves to conserve and develop the Netherlands' green heritage.

**Table 1**
Evaluative questions of GAT.

| Governance dimension | Quality of the governance context | | | |
|---|---|---|---|---|
| | Extent | Coherence | Flexibility | Intensity |
| Levels & scales | Are all relevant levels (EU, national, regional, local) involved in dealing with an issue? Are there any gaps or missing levels? | Do these levels work together, trust each other between levels? Is mutual dependence among levels recognised? | Is it possible to move up and down levels (up scaling and downscaling) given the issue at stake? | Is there a strong impact from a certain level towards behavioural change or management reform? |
| Actors & networks | Are all relevant stakeholders involved? Are any not involved or excluded? | Do the stakeholders work together? Do they trust and respect each other? | Is it possible that new actors are included or even shifts from one actor to another? Do the actors share and support each other's tasks? | Is there a strong pressure from an actor or actor coalition towards behavioural change or management reform? |
| Problem perspectives & goal ambitions | To what extent are the various problem perspectives taken into account? | To what extent the governance arrangements in place manage the clash of interests? | Are there opportunities to re-assess goals? Can multiple goals be optimised in package deals? | How different are the goal ambitions from the status quo or business as usual? |
| Strategies & instruments | What types of instruments are included in the policy strategy? Are there any excluded types? Are monitoring and enforcement included? | To what extent is the incentive system based on synergy? Are trade-offs between different objectives considered? Are there any overlaps or conflicts of incentives created by the included policy instruments? | Are there opportunities to combine or make use of different types of instruments? Is there a choice? | What is the implied behavioural deviation from current practice and how strongly do the instruments require and enforce this? |
| Responsibilities & resources | Are all responsibilities clearly assigned and facilitated with resources? | To what extent do the assigned responsibilities create competence struggles or cooperation within or across institutions? Are they considered legitimate by the main stakeholders? | To what extent is it possible to pool the assigned responsibilities and resources as long as accountability and transparency are not compromised? | Is the amount of allocated resources sufficient to implement the measures needed for the intended change? |

of the last century, this ecosystem was threatened, mainly as a result of intensive farming. The watertable in the surrounding polders was lowered. This resulted in the low-lying bog areas drying up, while the reed beds became acidified and, in many places, nitrate-rich water drained from the polder into the peat ditches. This accelerated the natural process changing rich low-lying bog biotopes into marshy woodland with poor biodiversity (Natuur en Milieu, 2017).

Nowadays, environmental pressures include insufficient water quality and high phosphate content (due to intensive farming), even though phosphate levels have reduced through some measures. However, in isolated waters total phosphate levels are still high. Nitrogen deposition is also a problem and this accelerates succession, making peat moss reedlands transition faster to forest or to species-poor trunk communities. Consequently, environmental quality is an issue that has resulted, for example, in disturbance to some bird species (black tern) that breeds in the park. During the breeding season (especially in chick phase), disturbance caused by recreation or agricultural activities can be disastrous. The surface of natural breeding biotope is decreasing due to succession. The intensification of agriculture also leads to a loss of foraging area. Thus, recovery of the water quality is of great importance (Natuur en Milieu, 2017).

**Fig. 2.** Weerribben-Wieden National Park in a country map. Legend: 20 National Parks of the Netherlands By JrPol - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/wiki/File:NL-Nationaleparken.svg. Weerribben-Wieden map - By OpenStreetMap contributors openstreetmap.org, CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=9965609.

**Fig. 3.** Weerribben-Wieden: Ditches in reed beds occur during peat cutting in earlier years. Source: By Dominicus Johannes Bergsma - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=37556461

The park is rich in biodiversity and provides a wide range of ecosystem services[4] (van der Heide et al., 2016). A conflict of interests exists between different stakeholders due to the demand for those services with differing opinions as to how to best manage the area. Although the Weerribben-Wieden is protected area, it is easily accessible for recreation by water or by road (Fig. 4). The major conflicts lie between conservation and recreation/tourism activities. These activities most affect biodiversity (Bakecura, 2015). These issues make the context of the Weerribben-Wieden management challenging.

### *5.2. Transition of governance from an old to a new style as an effect of nature policy changes*

After the Dutch government transferred its tasks for nature conservation to the provinces, a Consultative Body (Overlegorgaan) was created to govern the Weerribben-Wieden involving different actors from many levels (from the province, municipalities, the owners and managers in the region, reed cutters and recreation entrepreneurs). The management and development plan was drafted in cooperation with the local population, with regular quarterly meetings. From January 2015, Overlegorgaan ceased functioning, and the organisation of the national park changed. The Province of Overijssel transferred the responsibility for the park to the municipality of Steenwijkerland, reflecting a second phase of decentralisation. The province was still responsible to a lesser extent, but delegated tasks to the municipality level. The municipality took an initiative, together with other parties in the region, to offer a new development perspective. At the time of writing, the Weerribben-Wieden was transitioning to the new independent organisational structure with a core group to take responsibility, consisting of:

- Local Government: Municipality Steenwijkerland
- The land management organisations: Nature Monuments (Natuurmonumenten) and Forestry Commission (Staatsbosbeheer)
- Entrepreneurs Platform Steenwijkerland (Ondernemersplatform Steenwijkerland)
- Entrepreneurs: KOPTOP (the association of recreation entrepreneurs in the WaterReijk Weerribben-Wieden region.),
- Royal Catering Netherlands (Koninklijke Horeca Nederland afdeling Steenwijkerland),
- LTO-farmers organisation
- Inhabitants: Local Interest from Wieden and from the Weerribben

The core group, under the direction of municipality, is expected to present a draft proposal of a new independent organisational structure to the Board of Mayor and Aldermen (Het College van Burgemeester en Wethouders, B&W) and to the City Council (Gemeente Steenwijkerland, 2015). While this implies that the new governance situation is still in transition, the contours of the new model are sufficiently clear to assess the support or restriction they give to implementing resilience-oriented measures.

## 6. Application of the governance assessment framework to the case

### *6.1. Results of the governance context analysis*

The governance context for resilience measures and aspects in a transition phase is analyzed according to the governance assessment tool's five dimensions that take account of the four qualities of extent, coherence, flexibility and intensity. The information comes from interviews, an interactive workshop with stakeholders, and relevant documents and reports (Gemeente Steenwijkerland, 2015; van der Heide et al., 2016; Natuur en Milieu, 2017; Eindadvies Kernteam NPWW, 2017). Two stages of the analyses were performed: first, the interview data were collected according to the five governance dimensions to identify the issues and describe the context; then, the acquired data were analyzed according to the four evaluative criteria to assess the quality and ability of the governance context to deal with the concerned issues. The GAT questions were used as a checklist to ensure that all issues were covered during the interviews or meetings. Each of the twenty cells of the GAT matrix was assessed by a brief statement and given a judgment of 'supportive', 'neutral' or 'restrictive' in discussions between observers. The statements are visualised in Table 2 with colours and scores.

### *6.2. Discussion on the results analysis*

#### *6.2.1. Extent*

The degree of *extent* was observed as being verging towards *restrictive*, due to the absence of national and regional levels. After the decentralisation in most Dutch national parks, the national level roles were transferred to the provincial level. However, in this case, since 2014, the provincial level also withdrew itself from nature tasks and its role taken over by the municipality level. This new perspective was a challenge for Weerribben-Wieden. The ecological scale of nature is bigger than the park itself. The boundary is an influence zone of a strict nature conservation area, tourism and social economic dimensions. The *actors and networks* are mostly local authorities, tourism organisations, horeca, entrepreneurs, farmers, community and nature protection organisations. The missing actors are the water board and the Province of Overijssel. The Province observes from a distance unless good opportunities arise to contribute to provincial goals when it is then willing to step in. The water board involvement is passive, which is unfavourable as some water-related issues fall under their jurisdiction. There is a wide range of *problem perspectives and goals* from various actors, but a relevant

[4] For example, the area produces reeds, peat and fish; it captures carbon and provides protection against flooding; it purifies water and offers opportunities for both daytime and longer term recreation (both on the water and on land) and it offers a wealth of natural beauty and heritage landscapes (van der Heide et al., 2016).

**Fig. 4.** National park Weerribben-Wieden, location De Wieden popular for recreation.
Source: By Dominicus Johannes Bergsma - Own work, CC BY-SA 3.0 nl, https://commons.wikimedia.org/w/index.php?curid=33258339

perspective towards (system) resilience is missing. *Strategies and instruments* towards promoting resilience are also vague. For instance, no proper zoning system exists to prevent visitors accessing certain places. This leads to damage in essential sub-systems. For example, "*strategies and instruments promoting electric boating in the area are lacking. Although local government decides which boats are allowed, and bans the use of motor boats, but due to lack of political support the use is not fully banned* (Municipal authority respondent)." Responsibilities and resources are also restrictive to realise resilience goals. Responsibilities for implementing resilience measures are assigned, but with no clear allocation and/or insufficient resources for implementation. Responsibility for changing the governance context is mainly allocated to a local municipality Steenwijkerland, which leads the core group in developing the new brand development. The new transition process is part-funded by the province, but with no responsibility for resilience goals. Although some resources are provided by local authority and by private funds. Responsibilities for conservation are assigned to nature organisations (Staatsbosbeheer and Natuurmonumenten), but with insufficient resources due to budget cuts. Insufficient resources have led nature organisations to combine their functions with other sectors, such as recreation, agriculture and water management. Less funding from government and the new structure means that people who profit from the area can and ought to take a responsibility for its protection and development. However, this is complicated and is met with resistance. Regional stakeholders are hesitant to give interviews or attend organised meetings.

**Table 2**
Visualisation of the governance context analysis.

| | Quality criteria | | | |
|---|---|---|---|---|
| Dimensions | Extent | Coherence | Flexibility | Intensity |
| Levels & scales | (-) restrictive; lack of multi-level involvement | (-) restrictive; interactions are limited to the local level | (0) neutral; challenged due to the missing higher levels | (-) restrictive, lack of pressure in support of resilience goals |
| Actors & networks | (0) neutral; with majority of local actors. | (0) neutral; actors work together but their interests do not support each other. | (+) supportive; new actors can be included | (-) restrictive, with a weak pressure from actors |
| Problems & goals | (0) neutral; wide range of perspectives but with missing the relevant to resilience one. | (-) restrictive; various perspectives of actors are in conflict. | (0) neutral; lack of common goal for the area | (-) restrictive; goal ambitions are different from resilience goals |
| Strategies & instruments | (-) restrictive; lack of instruments and vague strategies | (-) restrictive; no coherent strategies and instruments to promote the park | (0) neutral; opportunities not yet identified | (-) restrictive; no common strategy for resilience to deviate from current practices. |
| Responsibilities & resources | (-)restrictive; no clear allocations of resources | (-)restrictive; lack of motivation from businesses to take responsibility for the area | (0) neutral, depending on a new type of organization so far | (-) restrictive; allocation of funds is not clear after transition |

(+) Green-supportive; (0) Yellow-neutral; (-) Red-restrictive.

### 6.2.2. Coherence

The degree of coherence is assessed as *restrictive*; decentralisation of tasks to the municipal level with the transition to the new governance model has weakened coherence of *levels and scales*. The ecological corridors connecting areas of special value through National Ecological Networks are no longer actively strived for. In spite of collaboration in a core group on a new governance perspective, the decision-making is still dependant on higher levels outside the core group. Although the interactions within a core group are on a regular basis, the interests of actors do not support each other. The core group facilitates interactions between actors, with a leading role of the local municipality. Outside the core group, the interactions are weaker. There is also incoherence of various perspectives and interests for the dimension of *problem perceptions and goals*. It was said "*The core group's intention is to organise a situation where, for example, famers do not oppose but on the contrary admit that there is a strong interaction between the farmer's land and strict national park, as traditionally farming community and nature conservation always oppose each other. But in a new situation the goal is to find a common ground where both farmers and nature benefit from each other (e.g. farmers can benefit from visitors and recreation, selling the local produce, and making the area attractive for visitors)* (Municipal authority respondent)." There is a conflict of interests between the ecological resilience of the national park and the businesses in and around the park as well. This makes realization and achievement of planned goals challenging. The decreasing quality of natural conditions is not regarded as an urgent problem by some actors. Coherence of *strategies and instruments* is also restrictive; mainly when it concerns the instruments related to the ecosystem service, such as recreation. Sound recreation is an important strategy for resilience in terms of zoning strategies and informed visitors. However, various actors involved in the management have no coherent strategies and instruments to promote for visitors. "*Visitors are insufficiently informed about the places they visit. There is no code of conduct and no markers that indicate that one is in the national park area*". "*Although the region attracts plenty of visitors, there is insufficient cooperation between the various tourism sectors. The villages in the area have different attitude to the Weerribben-Wieden. Multitude of names,*

*different themes and logos are presented depending on the interests of actors* (Municipal authority respondent/member of a core group)." This points to more competition and conflict, rather than cooperation among stakeholders. This influences coherence negatively. This also shows a lack of incentives for actors towards resilience goals for the park.

Cooperation of assigned responsibilities for conservation and development of the area is weak, which makes coherence of *responsibilities and resources* to be rather restrictive. Businesses and users who profit mostly from the area are not really willing to take responsibility for the management of the area on which their main activities rely, especially when it concerns the contributions expected from them. The threat of the decline of the natural conditions in the area is not seen as an urgent problem as well. Although, stakeholders in business, recreation and other sectors are well aware of the economic importance of the Weerribben-Wieden, they fear being presented with the bill. It would help if entrepreneurs could contribute to the management of the area, if not in financial terms, at least in promotional terms, but they lack incentives and motivation for this.

#### 6.2.3. Flexibility

The degree of flexibility was observed as *neutral*. In *levels and scales*, it is challenging given the missing higher national and regional levels. Downscaling tasks to the municipal level and the transition process provides some room for flexibility. In *actors and networks* dimension, flexibility was observed to be supportive as new actors can be involved through the project groups established on specific issues to be addressed. These groups relate to marketing and promotion, new brand development, and boundary groups. The position of the Municipality of Steenwijkerland is more prominent. They act as a mediator as well being a leading actor. It takes much discussion to persuade other actors about a need of a new brand organisation as they want to know what benefits, they can obtain. Actors with more interest in certain issues can take a lead in an issue. For example, not to allow the introduction of activities that do not fit well with the area.

In terms of *problems and goals*, there are opportunities to reassess goals in the transition process, but not yet to optimise multiple goals in one package deal due to a lack of a common goal. For example, "*introduction of the water jet ski business by an entrepreneur on one of the lakes in the park was not reconsidered by local actors (and declined) as this type of recreational activity was unfavourable for the area and was not fitting in a common image for the park* (Municipal authority respondent)."

There is an opportunity for *strategies and instruments* to combine different types of instruments, but in the transition process it is unclear. The actors in the core group are quite flexible with regard to the instruments; the strategic plan is in the development process.

*Responsibilities and resources* were observed as neutral. Flexibility to pool the assigned resources was thought to depend on the type of new organisation. The discussion was to organise a cooperative or foundation. A cooperative was not favoured as it would tend to have too many members with no clear direction or aim. Thus, a foundation was considered more favourable.

#### 6.2.4. Intensity

The degree of intensity was observed as *restrictive*. By withdrawing, the province had removed its contribution to the intensity of governance towards resilience goals. Also, under Nature 2000, and its important wetland area status, means additional pressure comes from EU regulations and the Ramsar convention to maintain the quality of the area. The practical responsibilities for these regulations shifted to the province, but the Province of Overijssel withdrew itself from that. Moreover, budget cuts left authorities to question the feasibility of the implementation of the National Ecological Networks, which is currently implemented on a voluntary basis.

In *actors and networks*, the withdrawal of provincial level makes the actors intensity quite low; municipality has limited means for such a big national park management. Pressure from an actor coalition towards resilience, (which is represented by a core group) is weak due to withdrawal of provincial support.

Regarding *problems and goals*, intensity towards resilience goal is restrictive. The new core group has not yet developed strong ambitious goals towards increasing resilience of the park. As for *strategies and instruments*, the intensity to change from current practices also verges towards restrictive. The national park is the main attraction of the area, but is not perceived that way and is not promoted as a resilient area. There is hardly any information in the village itself about the park and village entrepreneurs are not promoting the national park, seemingly, in order not to have to share the customers and visitors with the national park.

The *Responsibilities and resources* dimension was observed as restrictive as well. Although some resources were made available for the transition period, what happens after this is not clear as was pointed out "*The national programme expires in early 2018 and the financial commitment of central government is gone afterwards. And the mentioned funding is by far not enough to implement substantial measures in 2018 onwards* (Municipal authority respondent)."

Even though national government is no longer involved an agreement with IUCN from the 1990s remains in force that makes national government still responsible. However, with no financial terms, this depends on resources from EU-level programmes.

The observations visualised in Table 2 revealed several concerns for governance in all qualities of the regime, and where improvements can be made.

It was observed that the degree of *extent* verges towards restrictive. Mostly local levels are involved. So, with various actors directly concerned with the park, this gives potential to strengthen this quality. Actors, such as Staatsbosbeheer (Forestry Commission), endeavour to maintain effective relationships with provincial authorities, members of the public, the business community and other organisations involved in managing conservation areas. *Coherence* is also restrictive as various perspectives and interests of stakeholders do not support each other. Only *flexibility* was regarded as being neutral, but is still challenged given the missing higher levels. However, the transition process provides some room for new actors to be included through the project groups, to reassess goals and to allow actors concerned with certain issues to take a lead. *Intensity* to change is restrictive in all dimensions, with lack of pressure from actors towards resilience goals. Moreover, responsibilities are not supported with enough resources, and the allocation of resources to implement measures needed for intended change is not clear after the transition period.

## 7. Discussion and conclusions

This article focused on a governance assessment of the Weerribben-Wieden national park facing a challenge related to institutional changes in the governance of nature policy. The purpose was to reveal supporting and/or hindering governance factors to support the resilience of the area in a transition process towards a new governance model. The research question (To what extent governance factors support or hamper implementation of measures to foster resilience of the park?) intended to identify which aspects support or hamper the governance context to foster resilience in the area. It was found that the institutional changes do restrict resilience of the area with respect to qualities such as extent, coherence and intensity. Only with regard to flexibility does the new situation offer advantages. The quality of the governance context can be described as moderately flexible with restrictive intensity towards resilience goals. Incoherence of problems and goals among the stakeholders influences resilience negatively and challenges reaching a resilience goal. Although stakeholders agree that park governance has to change, there is a diminished sense of responsibility to maintain the park's resources. The case study focused also on ecosystem services, such as recreation. The biggest hindrance to the

utilisation of this service was competition, rather than cooperation, among actors. In particular, there was insufficient cooperation between the various tourism sectors.

With regards to decentralisation of nature policy and resilience of natural park, the main insight of the study was that a change in the institutional context has significant influence on governance for resilience. We learnt that for governance to manage resilience, not only are legal frameworks and institutions essential, but also collaboration and cooperation across different levels of government and actors (Cosens, 2010; Garmestani and Benson, 2013). Of course, in principle, decentralisation of the governance of national park offer advantages. Decentralisation to the province was based on a belief of a market-oriented approach and the uptake of individual responsibility and involvement. We cannot conclude whether that might work at the provincial level. The research of this case only communicates that further decentralisation to the municipality is not delivering the expected individual responsibility and involvement. On the other hand, decentralised actors and policies might also improve taking local circumstances and variations into account. But this also did not happen. This leads us to our core observation: decentralisation without balanced problem perspectives and goal ambitions, without an integral approach towards the park's resilience (embraced by local politics and local stakeholders), and without capacities for developing adequate strategies and instruments, most likely will lead to a lengthy transition process with uncertain outcomes.

Regarding the future governance of the transition process at local level, we have the following observation: the current governance of the Weerribben-Wieden is on a lower (local) level, with the municipality taking responsibility as opposed to former provincial level of administration. Since the cancellation of the former governing body (Overlegorgaan), the emergence of the new core group has evolved a new perspective and new developments for the area. In this new perspective, the quality of the natural resources is linked to factors that go well beyond the strict boundaries of the national park, although the park remains the main attraction of the area. However, the national park is not perceived as such and is not represented as a main attraction by local entrepreneurs, but rather as an activity to be undertaken after visiting a popular village Giethoorn (Fig. 5) within the Weerribben-Wieden.

The potential strength of the new governance arrangement is that it has included various stakeholders (on a lower level) who are directly concerned with the park, but have fewer concerns about the resilience of the park. This can be improved after the transition process by focusing on resilience goals as a common future strategy for the management. This can overcome existing conflicts for a resilient future of the park. Moreover, the situation can be improved by better cooperation with stakeholders on higher levels and by obtaining adequate funding for the area.

The research contributes to the understanding of protected area resilience from a governance perspective. This focus on governance and resilience matches the need identified both by academia and practitioners, including IUCN (Borrini-Feyerabend et al., 2013). It also matches a well-identified need for published case studies of resilience operationalisation in practice (Davidson et al., 2013). The study enriches the limited scholarly literature on the governance for resilience in protected areas by using a governance assessment framework for analysis of the governance context of the national park. The relevance of this assessment framework is that it enables us to understand the key characteristics of the stakeholders involved in the governance processes and the dynamics of the processes over time. The results could be beneficial for policy makers and practitioners, and also researchers for governance analysis, policy planning, and implementation. The research is useful for other protected areas by providing a practical example of the operationalisation of resilience and the governance assessment of a national park. This improves the understanding of the relationship between the governance context, governance processes and ecosystem resilience.

**Fig. 5.** Popular village Giethoorn within the Weerribben-Wieden. Source: By Gouwenaar - Own work, Public Domain, https://commons.wikimedia.org/w/index.php?curid=10381272

## References


Adger, W.N., 2003. Building resilience to promote sustainability. IHDP Update 2 , pp. 1–3. http://www.ihdp.unu.edu/docs/Publications/Secretariat/Update-Dimensions/IHDP-Update-2003-2.pdf.

Andersson, K.P., Ostrom, E., 2008. Analyzing decentralized resource regimes from a polycentric perspective. Policy. Sci. 41, 71–93. https://doi.org/10.1007/s11077-007-9055-6.

Bahadur, A.V., Ibrahim, M., Tanner, T., 2010. The resilience renaissance? Unpacking of resilience for tackling climate change and disasters. Strengthening Climate Resilience Discussion Paper 1. Institute of Development Studies, University of Sussex, Brighton http://www.fsnnetwork.org/sites/default/files/ids_resilience-renaissance.pdf.

Bakecura, L., 2015. Assessment of Spatial Temporal Distribution of Reed-Land Ecosystem Services: A Case Study Weerribben-Weiden, the Netherlands. (Master thesis). Faculty of Geo-Information Science and Earth Observation at the University of Twente.

Béné, C., Cannon, T., Gupte, J., Mehta, L., Tanner, T., 2014. Exploring the Potential and Limits of the Resilience Agenda in Rapidly Urbanising Contexts. Institute of Development Studies.

Best, E.P.H., Verhoeven, J.T.A., Wolff, W.J., 1993. The ecology of the Netherlands wetlands: characteristics, threats, prospects, and perspectives for ecological research. Hydrobiologia 265, 305. https://doi.org/10.1007/BF00007274.

Borrini-Feyerabend, G., Hill, R., 2015. Governance for the conservation of nature. In: Worboys, G.L., Lockwood, M., Kothari, A., Feary, S., Pulsford, I. (Eds.), Protected Area Governance and Management. ANU Press, Canberra, pp. 169–206.

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Pathak Broome, N., Phillips, A., Sandwith, T., 2013. Governance of Protected Areas: From Understanding to Action. Best Practice Protected Area Guidelines Series No. 20. IUCN, Gland.

Bressers, H., 2004. Implementing sustainable development: how to know what works, where, when and how. In: Lafferty, William M. (Ed.), Governance for Sustainable Development: The Challenge of Adapting Form to Function. Edward Elgar Publishing, Cheltenham, pp. 284–318.

Bressers, H., Kuks, S. (Eds.), 2004. Integrated Governance and Water Basin Management: Conditions for Regime Change and Sustainability. Kluwer Academic Publishers, Dordrecht-Boston-London.

Bressers, H., Lulofs, K., 2010. Analysis of boundary judgments in complex interaction processes. In: Bressers, Hans, Lulofs, Kris (Eds.), Governance and Complexity in Water Management. Edward Elgar, Cheltenham, pp. 17–32.

Bressers, H., De Boer, C., Kuks, S., Özerol, G., Vinke-De Kruijf, J., 2013. Water governance assessment tool - summary. DROP project - Benefit of Governance in Drought Adaptation.

Bressers, H., Bressers, N., Kuks, S., Larrue, C., 2016. The governance assessment tool and its use. In: Bressers, Hans, Bressers, Nanny, Larrue, Corinne (Eds.), Governance for Drought Resilience: Land and Water Drought Management in Europe. Springer, Cham, Switzerland , pp. 45–65. http://link.springer.com/chapter/10.1007%2F978-3-319-29671-5_3.

Buijs, A., Mattijssen, T., Arts, B., 2014. The man, the administration and the counter-discourse: an analysis of the sudden turn in Dutch nature conservation policy. Land Use Policy 38, 676–684. https://doi.org/10.1016/j.landusepol.2014.01.010.

Carpenter, S.R., Folke, C., 2006. Ecology for transformation; review. Trends Ecol. Evol. 21 (6).

Carpenter, S.R., Walker, B.H., Anderies, J.M., Abel, N., 2001. From metaphor to measurement: resilience of what to what? Ecosystems 4, 765–781.

Casiano, C., 2017. Context Matters: Water Governance Assessment of the Wastewater Treatment Plant Policy in Central Mexico. (PhD Thesis). University of Twente, Enschede https://doi.org/10.3990/1.9789036543224.
Chandler, D., 2014. Beyond neoliberalism: resilience, the new art of governing complexity. Resilience 2 (1), 47–63. https://doi.org/10.1080/21693293.2013.878544.
Clement, S., Moore, S.A., Lockwood, M., 2016. Letting the managers manage: analyzing capacity to conserve biodiversity in a cross-border protected area network. Ecol. Soc. 21 (3), 39. https://doi.org/10.5751/es-08171-210339.
Cosens, B., 2010. Transboundary river governance in the face of uncertainty: resilience theory and the Columbia River Treaty. J. Land Resour. Environ. Law 30, 229–265.
Cox, M., 2012. Diagnosing institutional fit: a formal perspective. Ecol. Soc. 17 (4), 54. https://doi.org/10.5751/ES-05173-170454.
Davidson, J.L., van Putten, I.E., Leith, P., Nursey-Bray, M., Madin, E.M., Holbrook, N.J., 2013. Toward operationalizing resilience concepts in Australian marine sectors coping with climate change. Ecol. Soc. 18 (3), 4. https://doi.org/10.5751/ES-05607-180304.
Davoudi, S., 2012. Resilience: a bridging concept or a dead end. Plann. Theory and Pract. 13 (2), 299–333. https://doi.org/10.1080/14649357.2012.677124.
De Boer, C., Bressers, H., 2011. Complex and Dynamic Implementation Processes; Analyzing the Renaturalization of the Dutch Regge River. University of Twente in collaboration with Dutch Water Governance Centre, Enschede, The Netherlands.
De Bruijn, K., Buurman, J., Mens, M., Dahm, R., Klijn, F., 2017. Resilience in practice: five principles to enable societies to cope with extreme weather events. Environ. Sci. Pol. 70, 21–30 (April 2017).
Dearden, P., Bennett, M., Johnston, J., 2005. Trends in global protected area governance, 1992–2002. Environ. Manag. 36 (1), 89–100. https://doi.org/10.1007/s00267-004-0131-9.
Djalante, R., Holley, C., Thomalla, F., 2011. Adaptive governance and managing resilience to natural hazards. Int. J. Disaster Risk Sci. 2 (4), 1–14.
Dudley, N., Groves, C., Redford, K.H., Stolton, S., 2014. Where now for protected areas? Setting the stage for the 2014 World Parks Congress. Oryx 48 (4), 496–503.
Eagles, P.F.J., Romagosa, F., Buteau-Duitschaever, W.C., Havitz, M., Glover, T.D., McCutcheon, B., 2013. Good governance in protected areas: an evaluation of stakeholders' perceptions in British Columbia and Ontario provincial parks. J. Sustain. Tour. 21 (1), 60–79. https://doi.org/10.1080/09669582.2012.671331.
Eindadvies Kernteam NPWW [Final Advice Core Team NPWW], 2017. Weerribben-Wieden Kernteam [Weerribben-Wieden Core Team]. At:. http://www.kalenberg.nu/wp-content/uploads/2017/03/Eindadvies-kernteam-Nationaal-Park-Weerribben-Wieden.pdf.
Eklund, J., Cabeza, M., 2016. Quality of governance and effectiveness of protected areas: crucial concepts for conservation planning. Annals of the New York Academy of Sciences. Wiley Periodicals, Inc. on behalf of New York Academy of Sciences https://doi.org/10.1111/nyas.13284.
European Commission, 2011. Our life insurance, our natural capital: an EU biodiversity strategy to 2020; (2011/2307(INI)). http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/EP_resolution_april2012.pdf.
Folke, C., 2006. Resilience: the emergence of a perspective for social-ecological systems analyses. Glob. Environ. Chang. 16, 253–267. https://doi.org/10.1016/j.gloenvcha.2006.04.002.
Folke, C., Hahn, T., Olsson, P., Norberg, J., 2005. Adaptive governance of social-ecological systems. Annu. Rev. Environ. Resour. 30, 441–473.
Folke, C., Carpenter, S.R., Walker, B., Scheffer, M., Chapin, T., Rockström, J., 2010. Resilience thinking: integrating resilience, adaptability and transformability. Ecol. Soc. 15 (4), 20. http://www.ecologyandsociety.org/vol15/iss4/art20/.
Fung, A., 2006. Varieties of participation in complex governance. Public Adm. Rev. 66 (S1), 66–75.
Garmestani, A.S., Benson, M.H., 2013. A framework for resilience-based governance of socialecological systems. Ecol. Soc. 18 (1), 9. https://doi.org/10.5751/ES-05180-180109.
Gemeente Steenwijkerland, 2015. Opdracht voor het proces tot het Nationaal Park Weerribben-Wieden nieuwe stijl, (september 2015), kenmerk: 1524-3-REO-J.B [Municipality of Steenwijkerland, Assignment for the Process to the National Park Weerribben-Wieden New Style, (Sept., 2015), Reference: 1524-3-REO-J.B.].
Gunderson, L., Light, S.S., 2006. Adaptive management and adaptive governance in the Everglades ecosystem. Policy. Sci. 39, 323–334.
Hannah, L., 2006. Governance of Private Protected Areas in Canada: Advancing the Public Interest?. (PhD dissertation). University of Victoria
Hennessey, T.M., 1994. Governance and adaptive management for estuarine ecosystems: the case of Chesapeake Bay. Coast. Manag. 22, 119–145. https://doi.org/10.1080/08920759409362225.
Holling, C.S., 1973. Resilience and stability of ecological systems. Annu. Rev. Ecol. Syst. 4, 1–23. https://doi.org/10.1146/annurev.es.04.110173.000245.
Huitema, D., Mostert, E., Egas, W., Moellenkamp, S., Pahl-Wostl, C., Yalcin, R., 2009. Adaptive water governance: assessing the institutional prescriptions of adaptive (co)management from a governance perspective and defining a research agenda. Ecol. Soc. 14 (1), 26.
Janssen, M.A., Anderies, J.M., Ostrom, E., 2007. Robustness of social-ecological systems to spatial and temporal variability. Soc. Nat. Resour. 20, 307–322. https://doi.org/10.1080/08941920601161320.
Joseph, J., 2016. Governing through failure and denial: the new resilience agenda; millennium. J. Int. Stud. 44 (3), 370–390.
Kamphorst, D.A., Coninx, I., 2016. Neo-liberal transitions in nature policies in the Netherlands. Wettelijke Onderzoekstaken Natuur & Milieu, WOt-paper 46. Alterra Wageningen UR.
Kotzebue, J.R., Bressers, H.T.A., Yousif, C., 2010. Spatial misfits in a multi-level renewable energy policy implementation process on the Small Island State of Malta. Energy Policy 38 (10), 5967–5976.
Lockwood, M., 2009. Governance Assessment of Terrestrial Protected Areas: A Framework and Three Case Studies. University of Tasmania, Hobart http://www.geog.utas.edu.au/geography/nrmgovernance/.
Lockwood, M., 2010. Good governance for terrestrial protected areas: a framework, principles and performance outcomes. J. Environ. Manag. 91, 754–766.
López-Angarita, J., Moreno, R., Alvarado, C.E., Restrepo, P., Maldonado, J., Sánchez, J.A., 2009. A socio-ecological resilience approach for evaluating management effectiveness of marine protected areas. Final Report: NOAA CORAL GRANT NA07NOS4630021.
McLean, L., Guha-Sapir, D., 2013. Developing a resilience framework; project 308438 in the frame of ENHANCE program under the European Commission FP7. http://enhanceproject.eu/uploads/deliverable/file/12/ENHANCE_D2.2_Developing_a_resilience_framework.pdf.
Natuur en Milieu [Nature and Environment], 2017. Natura 2000-beheerplan definitief: De Wieden en Weerribben [Nature 2000 Management plan final]. Province of Overijssel, Zwolle.
Ostrom, E., 2009. A general framework for analysing sustainability of social-ecological systems. Science 325, 419–422. https://doi.org/10.1126/science.1172133.
Ostrom, E., 2010. Polycentric systems for coping with collective action and global environmental change. Glob. Environ. Chang. 20, 550–557. https://doi.org/10.1016/j.gloenvcha.2010.07.004.
Potts, R., Vella, K., Dale, A.P., Sipe, N., 2016. Evaluating governance arrangements and decision-making for natural resource management planning: an empirical application of the governance systems analysis framework. Soc. Nat. Resour. 29 (11), 1325–1341. https://doi.org/10.1080/08941920.2016.1185557.
Resilience Alliance, 2010. Assessing Resilience in Social-Ecological Systems: Workbook for Practitioners (Revised Version 2.0). Resilience Alliance http://www.resalliance.org/resilienceassessment.
van der Heide, C.M., Hendriks, C.M.A., Borgstein, M.H., 2016. Financiering van bestaande natuur: Praktijkcasus 'Weerribben-Wieden'. [Financing of existing nature: practice case 'Weerribben-Wieden']. Wageningen, LEI Wageningen UR (University & Research Centre), LEI Rapport 2016-056. 44 blz.; 6 fig.; 0 tab.; 26 ref.
Vinke de Kruijf, J., Kuks, S., Augustijn, D., 2015. Governance in support of integrated flood risk management? The case of Romania. Environ. Dev. 2015 (16), 104–118.
Walker, B.H., Holling, C.S., Carpenter, S.R., Kinzig, A., 2004. Resilience, adaptability and transformability in social–ecological systems. Ecol. Soc. 9 (2), 5. http://www.ecologyandsociety.org/vol9/iss2/art5.
Wolff, W.J., 1993. Netherlands – wetlands. Hydrobiologia 265 (1), 1–14. https://doi.org/10.1007/BF00007260.
Wyborn, C., 2015. Co-productive governance: a relational framework for adaptive governance. Glob. Environ. Chang. 30, 56–67. https://doi.org/10.1016/j.gloenvcha.2014.10.009.
Yin, R.K., 2003. Case Study Research, Design and Methods. 3rd ed. Sage, Newbury Park, CA 0-7619-2553-8.
Young, O.R., 2008. Building regimes for socio-ecological systems: institutional diagnostics. In: Young, O., King, L.A., Schroeder, H. (Eds.), Institutions and Environmental Change: Principal Findings, Applications, and Research Frontiers. MIT Press, Cambridge, MA, pp. 115–144 https://doi.org/10.7551/mitpress/9780262240574.003.0004.